

IN THE CLAIMS:

Please cancels 1-16.

Please add the following new claims:

1 17. (New) An electrochemical generator that may be used as a
2 primary or secondary electrochemical generator, the electrochemical generator
3 comprising two electrodes supporting different electro-active materials, the electrodes
4 being connected together by an electrolyte, wherein the electro-active material used in the
5 composition of at least one electrode includes one of an oxide or chalcogenide of
6 transition metals, or their at least partially lithiated form.

1 18. (New) An electrochemical generator in accordance with claim 17
2 wherein the oxide or chalcogenide of transition metals, or their at least partially lithiated
3 form, is selected from a group consisting of TiO₂, Nb₂O₅, Wo₃, MnO₂, HfO₂, TiS₂, WS₂,
4 TiSe₂, Li_xNiO₂, Li_xCoO₂, Li_x(NiCo)O₂, Fe₂O₃, Fe₃O₄, RuO_x, Fe_xS₂, Ru_xS₂, MoS₂, WS₂,
5 Ir_xO₂, Ce_xO₂, Li_xNa_yMnO_zI_n(n<1), In_xO₃, Ta_xO₅, SnM_xO_y, wherein M is one of a mixture
6 of the elements in the group, or Sn_xO₂ in mesoporous form having a pore size of 0.001 to
7 10 micrometers (micron) and a specific surface area between 2 and 2000 m²g.

1 19. (New) An electrochemical generator in accordance with claim 17
2 wherein at least one electrode is a mesoporous electrode, and wherein the mesoporous
3 electrode has a three dimensional bicontinuous structure consisting of an interconnected
4 solid phase material used for reversible ion intercalation and for electronic transport that
5 is in contact with an interconnected porous space filled with electrolyte that serves for
6 ionic transport.

1 20. (New) An electrochemical generator in accordance with claim 17
2 wherein the electro-active material is mesoporous and is prepared by precipitating a
3 precursor compound of the electro-active material in an aqueous solution via a sol-gel

4 method followed by deposition of a precursor on a conductive support and sintering at a
5 temperature between 300 and 800°C.

1 21. (New) An electrochemical generator in accordance with claim 17
2 wherein the electro-active material is mesoporous and is prepared by chemical reaction
3 between precursor compounds in aqueous solution in the presence of surfactant micelles,
4 and wherein the surfactant micelles act as templates to produce a desired mesoporous
5 morphology.

1 22. (New) An electrochemical generator in accordance with claim 21
2 wherein the desired mesoporous morphology is in the form of ordered hexagonal arrays.

1 23. (New) An electrochemical generator in accordance with claim 17
2 wherein the electro-active material is composed of elongated interconnected members
3 that are connected to other elongated members at at least two points of an aspect ratio of
4 at least 4 and of which a small dimension of the member is smaller than 300 nm.

1 24. (New) An electrochemical generator in accordance with claim 17
2 wherein the electro-active material is prepared by inclusion of solvents to a particle or
3 precursor and thus exerts control over the texture and morphology of the electro-active
4 material and of the porosity of the electrode, which may be controlled from 70% to 25%
5 by changing the ratio of oxide precursor grains versus solvent.

1 25. (New) An electrochemical generator in accordance with claim 17
2 wherein the electro-active material is mesoporous and is comprised of mesoporous beads
3 or rods that are 5-20 micrometers (microns) that are electrically connected together by
4 compressing, in the form of pellets or films, a mixture composed of the beads or rods, of
5 carbon powder or conducting polymer and of a bonding material contained in solvent,
6 and then performing drying the mixture on at least one of a conducting support and baking
7 at a temperature for binder or conductive matrix conversion to a desired state.

1 26. (New) An electrochemical generator in accordance with claim 17
2 wherein the electrolyte contains alkali or alkaline earth metals in cationic form.

1 27. (New) An electrochemical generator in accordance with claim 26
2 wherein the alkaline metal is lithium in the form of one of its salts chosen from a group
3 consisting of tetrafluoroborate, hexafluorophosphate, hexafluoroantimonate,
4 hexafluoroarsenate, trifluoromethane sulfonate, bis-(trifluorosulfonyl) imide, tris-
5 (trifluorosulfonyl)methide, trifluoro-methanesulfonate, trifluoroacetate,
6 tetrachloroaluminate and perfluorobutane sulfonate.

1 28. An electrochemical generator in accordance with claim 17 wherein
2 the electrolyte includes an aprotic solvent selected from a group consisting of ethylene
3 carbonate, propylene carbonate, dimethylcarbonate, diethylcarbonate, dioxolane,
4 butyrolactone, methoxypropionitrile, methoxy-ethoxy propionitrile, methoxy-
5 diethoxypropionitrile, methoxyacetonitrile, tetrafluoro-propanol and combinations
6 thereof.

1 29. (New) An electrochemical generator in accordance with claim 17
2 wherein the electrolyte includes a molten salt as a solvent for a lithium ion containing salt.

1 30. (New) An electrochemical generator in accordance with claim 29
2 wherein the molten salt is selected from a group consisting of methyl-ethyl-imidazolium
3 trifluoromethansulfonate, methyl-ethyl-imidazolium bis (trifluorosulfonyl) imide and
4 alkylguanidinium bis (trifluorosulfonyl) imide.

1 31. (New) An electrochemical generator in accordance with claim 26
2 wherein the electro-active material of at least one of the electrodes is capable of forming
3 an intercalation compound with the alkali or alkaline earth metal.

1 32. (New) An electrochemical generator in accordance with claim 17
2 wherein the electro-active material of one electrode is composed of TiO₂ in anatase form
3 having a mesoporous structure.

1 33. (New) An electrochemical generator in accordance with claim 17
2 wherein one of the two electrodes is a negative electrode and the other is a positive
3 electrode, and the negative electrode includes mesoporous TiO₂ and the composition of
4 the positive electrode includes Li_yMn₂O₄ (y<2) in amorphous or crystalline form, and
5 wherein the electrolyte is composed of a 1M solution of lithium bis-(trifluorosulfonyl)
6 imide in methoxypropionitrile as a solvent.

1 34. (New) An electrochemical generator in accordance with claim 17
2 wherein the electro-active material is mesoporous and is comprised of mesoporous beads
3 or rods that are 5-20 micrometer (micron) and form an electrode by templated ordering,
4 manipulative stacking or arrangement of the 5-20 micrometer (micron) mesoporous
5 particles.

1 35. (New) An electrochemical generator in accordance with claim 32
2 further comprising a separator that is a porous or mesoporous, high porosity insulating
3 material arranged in forms of continuous layers or particle spacers, and a current
4 collector-substrate that is selected from a group consisting of carbon, graphite paper,
5 stainless steel, titanium or aluminum alloy and DSA.

1 36. (New) An electrochemical generator in accordance with claim 35
2 wherein the insulating material is selected from a group consisting of zirconia, alumina,
3 glass and polypropylene.